

DIS2011

Electroweak Physics and Beyond the Standard Model Parallel Session IV, Tuesday 12th of April 2011, 16:00-18:15 Joint with Structure Functions and Parton Densities

Title: Measurement of the Lepton Charge Asymmetry in Inclusive $pp \rightarrow W + X \rightarrow (e/\mu)\nu + X$ Production at $\sqrt{s} = 7$ TeV

Michele Pioppi (Imperial College, Univ. of London)

We present the measurement of the W lepton charge asymmetry in pp collisions at $\sqrt{s}=7$ TeV using the data collected by the CMS detector in 2010. The measurement is performed using both $W \rightarrow \mu \nu$ and $W \rightarrow e \nu$ final states. The charge asymmetry is measured in 6 bins of absolute value of lepton pseudorapidity for two different thresholds of the lepton transverse momentum. This is the first high precision measurement of the W lepton charge asymmetry at the LHC, and provides new insights into proton structure functions.

Title: W and Z production measured using the ATLAS detector, and impact on parton densities of the proton

Frank Ellinghaus (Johannes-Gutenberg-Universitaet Mainz)

Title: Studies of electroweak boson production in the forward region with LHCb
TBA

We report on the first measurements of W and Z boson production, using muon final state topologies, with the LHCb experiment and using data taken at $\sqrt{s} = 7$ TeV. Measurements of the boson production cross-sections, ratios, and W charge asymmetry are compared to theoretical predictions. We discuss the potential sensitivity such measurements display to the underlying parton density functions.

Title: W charge asymmetry at the Tevatron

Heidi Schellman (Northwestern U)

We present new charged lepton asymmetry measurements using W bosons produced at the Tevatron. These asymmetries will be compared with theoretical predictions and with direct measures of the W asymmetry. We will also discuss the impact on structure functions determinations.

Title: The impact of Tevatron lepton asymmetry data in PDFs

Juan Rojo (INFN Milan)

We discuss impact of recent high statistics lepton asymmetry data from the D0 experiment on the NNPDF2.0 parton set. We find that the D0 inclusive muon and electron data are perfectly compatible with the rest of the data included in the NNPDF2.0 analysis and impose additional constraints on the large- x d/u ratio. The more exclusive D0 electron datasets are however inconsistent both with the other datasets and among themselves, suggesting that here the experimental uncertainties have been underestimated.